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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/816,287	03/21/2001	Vladislav Vashchenko	75292/10417	6106

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EXAMINER

PRENTY, MARK V

ART UNIT	PAPER NUMBER
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2822

DATE MAILED: 06/03/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
09/816,287

Applicant(s)  
VASHCHENKO et al.

Examiner  
Prenty

Art Unit  
2822



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Mar 21, 2001
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948) 5) ☒ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other:

This Office Action is in response to the papers filed March 21, 2001.

Claims 1-10 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Independent claim 1 is indefinite in reciting "wherein the second region is reduced in size to reduce the number of minority carrier that are injected to at least a point where holding voltage is increased beyond the holding voltage of a conventional LVTSCR."

Claims 2 and 3 depend on independent claim 1 and are thus similarly indefinite.

Claim 3 is further indefinite in reciting "wherein the third region is increased in size to reduce space charge neutralization."

Independent claim 4 is indefinite in reciting "adjusting the size of the second region to limit injection of minority carriers to achieve the desired elevated holding voltage."

Claims 5 and 6 depend on independent claim 4 and are thus similarly indefinite.

Claim 6 is further indefinite in reciting "adjusting the size of the third region to increase electron injection to a point where space charge neutralization is sufficiently limited to achieve the desired elevated holding voltage."

Independent claim 7 is indefinite in reciting "providing an SCR-like structure having a  $p^+$  emitter that is sufficiently reduced in size so as to limit hole injection to the point where the space charge neutralization is so limited as to increase the holding voltage to the desired level."

Independent claim 8 is indefinite in reciting “providing a LVTSCR-like structure having a  $p^+$  emitter that is reduced in size below a predetermined value and having a  $n^+$  emitter that is increased in size to a point where the space charge neutralization is so limited as to increase the holding voltage to the desired level.”

Independent claim 9 is indefinite in reciting “providing a LVTSCR-like structure having a  $p^+$  emitter that is sufficiently reduced in size so as to limit hole injection to the point where the space charge neutralization is so limited as to increase the holding voltage to the desired level.”

Independent claim 10 is indefinite in reciting “providing a LVTSCR-like structure having a  $p^+$  emitter that is reduced in size below a predetermined value and having an  $n^+$  emitter that is increased in size to a point where the space charge neutralization is so limited as to increase the holding voltage to the desired level.”

Claims 1-7, at least insofar as understood, are rejected under 35 U.S.C. §102 as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Prior Art Fig. 1.

With respect to claims 1-6, note the semiconductor material 110, well 112, first region 114, second region 116, third region 122 and fourth region 124.

With respect to independent claim 7, note  $p^+$  emitter 116.

Claims 1-6 and 8-10, at least insofar as understood, are rejected under 35 U.S.C. §102 as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Prior Art Fig. 2.

With respect to claims 1-6, note the semiconductor material 110, well 112, first

region 114, second region 116, third region 122 and fourth region 124.

With respect to independent claims 8 and 10, note p<sup>+</sup> emitter 116 and n<sup>+</sup> emitter 122.

With respect to independent claim 9, note p<sup>+</sup> emitter 116.

Registered practitioners can telephone the examiner at (703) 308-4939. Any voicemail message left for the examiner must include the name and registration number of the registered practitioner calling, and the application's Serial Number.

Technology Center 2800's general telephone number is (703) 308-0956.

Mark Prenty  
Mark V. Prenty  
Primary Examiner